

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
13 October 2005 (13.10.2005)

PCT

(10) International Publication Number
WO 2005/094502 A3

(51) International Patent Classification:

H01J 7/24 (2006.01) H05B 31/26 (2006.01)
H01J 17/36 (2006.01) H05B 41/00 (2006.01)

PII, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU,
ZA, ZM, ZW.

(21) International Application Number:

PCT/US2005/009723

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

(22) International Filing Date: 23 March 2005 (23.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/555,937 24 March 2004 (24.03.2004) US

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv))

Published:

— with international search report
— before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(71) Applicant and

(72) Inventor: AUCHTERLONIE, Richard [US/US]; 10022
Briar Drive, Houston, TX 77042 (US).

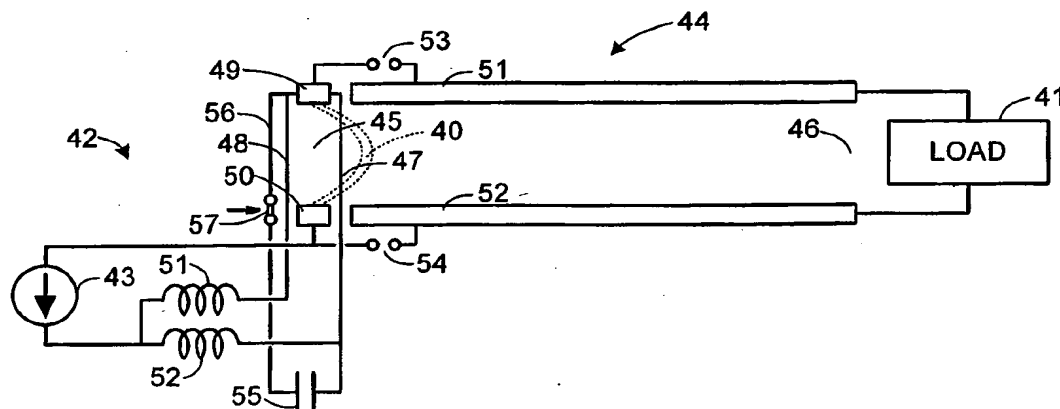
(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,

(88) Date of publication of the international search report:

26 October 2006

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: PULSED POWER SYSTEM INCLUDING A PLASMA OPENING SWITCH



(57) Abstract: A pulsed power system has an inductive energy storage circuit (42) including a current source (43) and a plasma opening switch (44). The plasma opening switch has a transmission line (51, 52) coupling the current source to a load (41). The plasma opening switch changes from a closed state to an open state when a plasma discharge (45) in the plasma opening switch is driven by magnetic force from a first region along the transmission line to a second region towards the load. Electrical conductors (47, 48) are arranged for providing a stabilizing magnetic field configuration in the first region to magnetically latch the plasma discharge in the first region during charging of the inductive energy storage circuit, and current flowing along the transmission line from the current source to the load tends to disrupt the stabilizing magnetic field configuration and unlatch the plasma discharge from the first region and drive the plasma discharge toward the second region.

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
13 October 2005 (13.10.2005)

PCT

(10) International Publication Number
WO 2005/094502 A2

(51) International Patent Classification: Not classified

MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SI, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:
PCT/US2005/009723

(22) International Filing Date: 23 March 2005 (23.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/555,937 24 March 2004 (24.03.2004) US

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant and
(72) Inventor: AUCHTERLONIE, Richard [US/US]; 10022 Briar Drive, Houston, TX 77042 (US).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

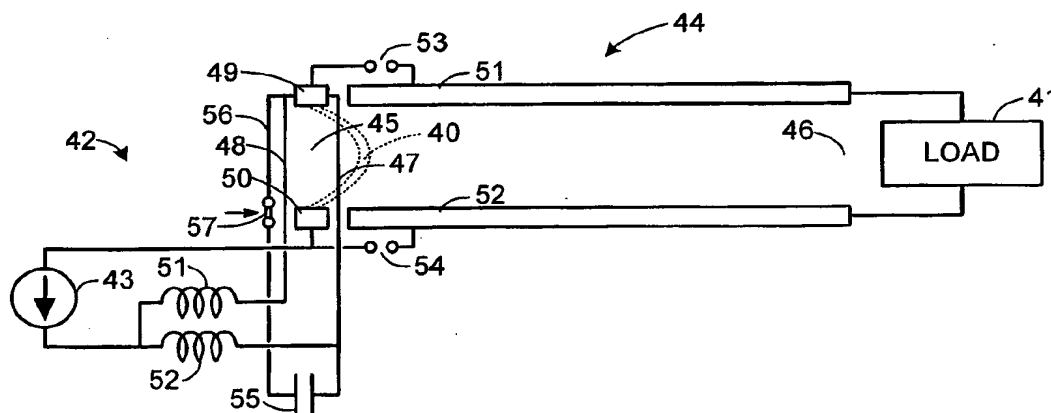
Published:

— without international search report and to be republished upon receipt of that report

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PULSED POWER SYSTEM INCLUDING A PLASMA OPENING SWITCH



(57) Abstract: A pulsed power system has an inductive energy storage circuit (42) including a current source (43) and a plasma opening switch (44). The plasma opening switch has a transmission line (51, 52) coupling the current source to a load (41). The plasma opening switch changes from a closed state to an open state when a plasma discharge (45) in the plasma opening switch is driven by magnetic force from a first region along the transmission line to a second region towards the load. Electrical conductors (47, 48) are arranged for providing a stabilizing magnetic field configuration in the first region to magnetically latch the plasma discharge in the first region during charging of the inductive energy storage circuit, and current flowing along the transmission line from the current source to the load tends to disrupt the stabilizing magnetic field configuration and unlatch the plasma discharge from the first region and drive the plasma discharge toward the second region.

WO 2005/094502 A2